In the specification:

Please amend paragraph 0213 to read as follows:

Accordingly, it is a principal object of the present invention to overcome the disadvantages of prior art ~~methods of~~ arrangements. This is provided in the present invention by a system of power pooling of DC electrical power consuming and providing entities being interconnected to pool power under control of a pooling controller.

Please amend paragraph 0213 to read as follows:

Reference is now made to Fig. 10, which is a simplified symbolic illustration of a DC power pooling system for a data communication network, in particular an Ethernet network, constructed and operative in accordance with a preferred embodiment of the present invention. As seen in Fig. 10, there is provided a DC power pooling system for a data communication network including a plurality of DC electrical power consuming and providing entities, here shown as disparate data communication Ethernet nodes, such as an Ethernet switch 950 operated by an AC/DC switching power supply 952 connected to AC mains power, a modem 960 operated by an AC/DC converter 962 connected to AC mains power, a router 970 operated by an AC/DC switching power supply 972 connected to AC mains power and an Ethernet switch with ~~power of Ethernet~~ power over Ethernet functionality 980 operated by an AC/DC switching power supply 982 connected to AC mains power. It is appreciated that each of the plurality of DC electrical power consuming and providing Ethernet nodes 950 & 952, 960 & 962, 970 & 972 and 980 & 982 has at least a first operative mode in which it may provide more electrical power than it consumes and a second operative mode in which it may consume more electrical power than it provides.

Please amend paragraph 0254 to read as follows:

Operation of bi-directional power bus 1210 is preferably governed by a power pooling controller 1230 which monitors and controls energy flows through power bus 1210 between the various data communication nodes, such as nodes 1102, 1104, 1106 and ~~240~~ 1240, power bus power supply module 1140 and battery pack 1108 in a manner to be described further hereinto below.

Please amend paragraph 0287 to read as follows:

Battery pack 1108 is in an exemplary embodiment a rechargeable battery pack and is preferably provided with a pair of SIUs ~~300~~ 1300, located at input and output ring ports of battery pack 1108. Battery pack 1108 comprises multiple rechargeable batteries 1420 which are charged from AC mains by a battery charger 1410 or by DC current received via one or both SIU 1300 via bi-directional power bus 1210 from one or more of the various data communication nodes, such as nodes 1104, 1106, 1240 – 1270 or from the power bus power supply module 1140.

Please amend paragraph 0426 to read as follows:

Operational amplifier 1942 receives an input from a current sensor 1580. A controllable resistor 1926 is interposed between current sensor 1580 and operational amplifier 1942 in order to enable control of the voltage/current relationship of PSC 1345. PSC 1345 further comprises a PSC controller 1928 which receives inputs from a second voltage sensor 1840 connected at the output of PSC 1345, ~~current sensor 1840~~ current sensor 1580 and a temperature sensor 1750. PSC controller 1928 provides a control signal output to controllable resistor 1926 and a control signal to controllable reference voltage source 1908. In addition, PSC controller 1928 communicates via data portion 1520 and the data portion of bi-directional power bus 1210 from power pooling controller 1230 (Fig. 17, 18A, 18B, 19A and 19B). Temperature sensor 1750 is operative to detect the operating temperature of internal power supply 1330, thus providing data input useful in preventing early failure of internal power supply 1330. PSC 1345 thus affects desired power sharing in accordance with a preferred embodiment of the present invention, being adaptable by commands received from power pooling controller 1230 in real time to various operational modes of the system.

Please amend paragraph 0431 to read as follows:

Reference is now made to Figs. 26A, 26B and 26C, which illustrate the voltage/current relationship provided by the embodiments illustrated in Figs. 25A - 25C, in which the x-axis represents output current I_{out}, and the y-axis represents voltage output V_{out}. Turning initially to Fig. 26A, it is seen that a linear relationship, whose slope, defined as $\Delta V/\Delta I$, is established and varied by the embodiments illustrated in each of Figs. 25A, 25B and 25C. Thus, an initial relationship as illustrated by line 1990 having a first slope, may be changed to a relationship having a steeper slope as illustrated by line 1994, or a relationship having a shallower slope as illustrated by line 1992. The specific relationship is realized by changing the voltage reference to an analog amplifier in each embodiment in response to the sensed output current. Various possible real-time modifications of the voltage current relationship in accordance with a preferred embodiment of the invention are thus represented by various ~~curves drawn in~~ dashed lines in Fig. 26A. These modifications are realized in the embodiments of Figs. 25A - 25C by control signals provided by PSC controller 1928 to controllable voltage reference 1908 and to respective controllable resistor 1926. The present invention enables the relative contributions of the power supplies engaged in current sharing to be modified in real time. This contrasts with conventional current sharing wherein the relative contributions of the power supplies are determined in advance.

Please amend paragraph 0457 to read as follows:

In the event that in stage 3310 it is deemed that the new node is deemed to be suitable for connection, in stage 3340 the voltage and current on bi-directional power bus 1210 are noted and in accordance therewith. In stage 3350 parameters of PSC 1340 or 1345 in the newly added node are set. In stage 3360, PSC 1340 or 1345 of the newly attached node is interrogated to report on current, voltage and optionally temperature parameters, to ensure that compliance with the parameters sent in stage 3340 is within the operational capability of PSC 1340 or 1345. In a preferred embodiment, PSC 1340 or 1345 comprises non-volatile memory, operable to store historical operating parameters. In stage ~~3360~~ 3365 compliance by the newly attached node as indicated by PSC controller 1928 through the data portion of bi-directional power bus 1210 is confirmed. In the event that in stage ~~3360~~ 3365 the operating parameters of the newly attached node are outside of the acceptable range, in stage 3370 a fault condition is indicated, and the fault routine of Fig. 33 is run.

Please amend paragraph 0458 to read as follows:

In the event that in stage ~~3360~~ 3365 the operating parameters are confirmed to be within the operating capabilities of PSC 1340, 1345 of the newly detected node, in stage 3380 the associated SIU 1300 is set in line with the parameters set in stage 3340 and the new node is powered. In an exemplary embodiment, SIU controller 1620 of SIU 1300 is set with the direction and current limit of the power to be shared from or to the newly attached node.

Please amend paragraph 0469 to read as follows:

Fig. 35 illustrates a high level flow chart of an addressing system in accordance with the principle of the subject invention. As indicated above, each node is provided with both an address, and a group number. Preferably, multiple nodes are provided with the same group number. In this manner, multiple nodes are addressed over a serial bus rapidly in the event of certain conditions, thus avoiding the need to individually address each node. In one non-limiting embodiment, in the event of a failure of a DC power source in a single node, pooling controller 1230 reacts by sending a group message to a plurality of nodes setting them to an emergency power mode. In one embodiment the emergency power mode comprises a reduced power demand ~~from of~~ of the electrical load of the node, and in another embodiment the reduced power mode comprises an increased power output of the associated DC power source of the node. In one embodiment reduced power demand of the electrical load of the node is accomplished by removing power from low priority loads. Preferably, the node is operable to notify the pooling controller of the failure of the DC power source of the node. In an exemplary embodiment, the use of group addressing allows for a response to a failure event within 10 milliseconds, thus avoiding any damage caused by an interruption in power. In one embodiment a failure is defined as an increase in temperature of a DC power source above a pre-set limit.